

S.N. 10/029,311
Atty Docket No. 13DV14196

REMARKS

Applicants respectfully request that the above application be reconsidered. Claims 1, 3-15 and 33 are currently pending; Claims 1-2 and 5-8 have been rejected; Claims 3-4 have been objected to; Claims 9-15 are considered allowable.

Applicants acknowledge that the Examiner has again withdrawn Claims 16-32 from further consideration pursuant to his prior restriction requirement. See page 2 of the Office Action. At this time, Applicants will not further contest this restriction requirement beyond what Applicants stated in their prior response of December 17, 2002, and have therefore cancelled these Claims without prejudice. Applicants retain the right to pursue these withdrawn and cancelled Claims in a subsequent divisional application.

Claim 1 has been amended to recite that the gas deflectors at least initially deflect the gas stream exiting each gas outlet in at least a curved generally centripetal path. Support for this amendment can be found in paragraph [0023] at page 8 of the above application.

Claim 2 (now cancelled) has been rewritten as new independent Claim 33; the dependency of Claim 3 has been changed accordingly.

A. Response to Rejection of Claims 1-2 and 5 under 35 USC 102(b) as Anticipated by Sandys, Hauser et al or Mahawili

At pages 2-4 of the Office Action, the Examiner has again rejected Claims 1-2 and 5 under 35 USC 102(b) as anticipated by U.S. Patent 4,807,562 (Sandys), U.S. Patent 4,142,004 (Hauser et al) or U.S. Patent 4,834,022 (Mahawili) for reasons stated in the prior Office Action.

In response to Applicants argument that none of the cited references teach "directing the gas stream exiting each gas outlet in at least a generally centripetal path" according to Claim 1, the Examiner refers to a dictionary definition of "centripetal" as "proceeding or acting in a direction toward a center or axis." The Examiner then says that the references relied on by him each show an apparatus that includes plural gas outlets in a peripheral surface of a gas head where the gas stream exiting each of the gas outlets is directed at a deflecting surface (i.e., deflector) such that the gas stream is deflected "at least initially" toward the center or central axis of the apparatus.

S.N. 10/029,311
Atty Docket No. 13DV14196

Responsive to this rejection, Applicants have amended Claim 1 to clarify that that the gas deflectors at least initially deflect the gas stream exiting each gas outlet in at least a curved generally centripetal path. Again, and contrary to what the Examiner suggests, Sandys, Hauser et al and Mahawili do not teach "directing the gas stream exiting each gas outlet in at least a generally centripetal path," and especially "in a curved generally centripetal path" as in amended Claims 1 and 5:

1. In Sandys and as stated at col. 4, lines 12-15, the gas stream exiting from delivery tubes 17 "is confined and deflected downward by the hollow cap 16." Sandys in no way teaches or suggests that its gas stream is directed initially in a generally centripetal path and especially a curved generally centripetal path as in amended Claims 1 and 5.
2. In Hauser et al, and as particularly shown in Fig. 1, the gas stream exiting gas ring 46 through apertures 48 is directed outwardly towards U-shaped end 42, then upwardly and then inwardly towards central region 56 where it exits. Again, Hauser et al in no way teaches or suggests that its gas stream is directed initially in a generally centripetal path, and especially a curved generally centripetal path as in amended Claims 1 and 5.
3. In Mahawili, and as shown particularly in Fig. 1, the gas stream flows outwardly from orifices 48b-1 through 48b-4, is directed downwardly from orifices 48b-1 and 48b-2 or upwardly from orifices 48b-3 and 48b-4, and then out through the gap between 4a and 29e and into exhaust chamber 24. Again, Mahawili in no way teaches or suggests that its gas stream is directed initially in a generally centripetal path, and especially a curved generally centripetal path as in amended Claims 1 and 5.

S.N. 10/029,311
Atty Docket No. 13DV14196

Responsive to this rejection, Applicants have amended Claim 1 to clarify that that the gas deflectors at least initially deflect the gas stream exiting each gas outlet in at least a curved generally centripetal path. Again, and contrary to what the Examiner suggests, Sandys, Hauser et al and Mahawili do not teach "directing the gas stream exiting each gas outlet in at least a generally centripetal path," and especially "in a curved generally centripetal path" as in amended Claims 1 and 5:

1. In Sandys and as stated at col. 4, lines 12-15, the gas stream exiting from delivery tubes 17 "is confined and deflected downward by the hollow cap 16." Sandys in no way teaches or suggests that its gas stream is directed initially in a generally centripetal path, and especially a curved generally centripetal path as in amended Claims 1 and 5.
2. In Hauser et al, and as particularly shown in Fig. 1, the gas stream exiting gas ring 46 through apertures 48 is directed outwardly towards U-shaped end 42, then upwardly and then inwardly towards central region 56 where it exits. Again, Hauser et al in no way teaches or suggests that its gas stream is directed initially in a generally centripetal path, and especially a curved generally centripetal path as in amended Claims 1 and 5.
3. In Mahawili, and as shown particularly in Fig. 1, the gas stream flows outwardly from orifices 48b-1 through 48b-4, is directed downwardly from orifices 48b-1 and 48b-2 or upwardly from orifices 48b-3 and 48b-4, and then out through the gap between 4a and 29e and into exhaust chamber 24. Again, Mahawili in no way teaches or suggests that its gas stream is directed initially in a generally centripetal path, and especially a curved generally centripetal path as in amended Claims 1 and 5.

S.N. 10/029,311
Atty Docket No. 13DV14196

Applicants further submit that Claim 33 (based on cancelled Claim 2) is further distinguishable over these references in reciting that each deflector directs the gas stream into a curved generally centripetal downward path. Indeed, the Examiner nowhere addresses in the current Office Action where Sandys, or any of the other references relied on by him, shows an apparatus having deflectors that direct the gas stream into a curved generally centripetal downward path. The Examiner also nowhere addresses where Sandys, or any of the other references relied on by him, shows angular gas deflectors comprising an aft component having a generally forward deflecting surface and an upper component having a generally downward deflecting surface as in Claim 33.

For the foregoing reasons, Applicants submit that Claims 1, 5 and 33 are novel and unobvious over Sandys, Hauser et al or Mahawili.

B. Response to Rejection of Claims 1 and 5 under 35 USC 102(g) as Anticipated by Choi et al

At page 3 of the Office Action, the Examiner has again rejected Claims 1 and 5 under 35 USC 102(b) as anticipated by U.S. Patent 6,183,563 (Choi et al) for reasons stated in the prior Office Action.

Applicants respectfully traverse this rejection. Again, and contrary to what the Examiner suggests, Choi et al does not teach "directing the gas stream exiting each gas outlet in at least a generally centripetal path," and especially "in a curved generally centripetal path" as in amended Claims 1 and 5. Instead, in Choi et al and as especially shown in FIG. 4, the inert gas stream is sprayed outwardly from nozzles 31 "lowering a wall of inert gas along the inner wall of the shield 25." Col. 3, lines 39-42. Again, Choi et al in no way teaches or suggests that its gas stream is directed initially in a generally centripetal path, and especially a curved generally centripetal path as in amended Claims 1 and 5.

For the foregoing reasons, Applicants submit that Claims 1 and 5 are novel and unobvious over Choi.

S.N. 10/029,311
Atty Docket No. 13DV14196

C. Response to Rejection of Claims 1 and 5 under 35 USC 102(e) as Anticipated by Turlot et al

At page 4 of the Office Action, the Examiner has again rejected Claims 1 and 5 under 35 USC 102(b) as anticipated by U.S. Patent 6,502,530 (Turlot et al) for reasons stated in the prior Office Action.

Applicants respectfully traverse this rejection. Again, and contrary to what the Examiner suggests, Turlot et al does not teach "directing the gas stream exiting each gas outlet in at least a generally centripetal path," and especially "in a curved generally centripetal path" as in amended Claims 1 and 5. Instead, in Turlot et al and as especially shown in FIG. 2, the gas stream simply exits through gas feed openings 44 in no particular disclosed path. Again, Turlot et al in no way teaches or suggests that its gas stream is directed initially in a generally centripetal path, and especially a curved generally centripetal path as in amended Claims 1 and 5.

For the foregoing reasons, Applicants submit that Claims 1 and 5 are novel and unobvious over Turlot et al.

D. Response to Rejection of Claims 6-8 under 35 USC 103(a) as Unpatentable over Sandys, Hauser et al, Mahawili, Choi et al or Turlot et al

At page 3 of the Office Action, the Examiner has again rejected Claims 6-8 under 35 USC 103(a) as unpatentable over Sandys, Hauser et al, Mahawili, Choi et al or Turlot et al for reasons stated in the prior Office Action.

Applicants respectfully traverse this rejection. Whether Sandys, Hauser et al, Mahawili, Choi et al or Turlot et al teach or suggest the specified number of gas outlet holes along the peripheral surface of the gas distributor of Claims 6-8 is beside the point. As previously pointed out by Applicants, none of these references disclose or suggest directing the gas stream exiting these outlet holes initially in a generally centripetal path, and especially a curved generally centripetal path as required by these Claims.

For the foregoing reasons, Applicants submit that Claims 6-8 are unobvious over Sandys, Hauser et al, Mahawili, Choi et al or Turlot et al, individually or in combination.

S.N. 10/029,311
Atty Docket No. 13DV14196

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E. Response to Objection to Claims 3-4

At page 4 of the Office Action, the Examiner has objected to Claims 3-4 as being dependent upon a rejected base claim, but says these Claims would be allowable if rewritten in independent form to include all limitations of the base claim and any intervening claims.

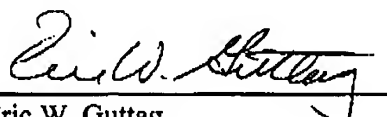
For reasons previously presented, Applicants submit that base Claim 33 should be allowable. Accordingly, Applicants respectfully request that the Examiner withdraw his objection to Claims 3-4.

F. Conclusion

In conclusion, Applicants submit that Claims 1, 3-15 and 33 are novel and unobvious over the prior art relied on by the Examiner. Accordingly, Applicants respectfully request that Claims 1, 3-15 and 33 be allowed to issue in the above application.

Respectfully submitted,

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